

REMARKS

Applicants respectfully request reconsideration of this application in view of the foregoing amendments and the following remarks.

Claim Status

Claims 12-22 are pending in this application and have been rejected. Claims 12-22 are herein canceled. New claims 23-34 have been added. No new matter has been added by these amendments.

Objections to the Specification

The Examiner has made numerous objections to the specification. Applicants have amended the specification to address the objections on pages 2-4 of the Office Action that are believed to be pertinent to Applicant's disclosure. Accordingly, reconsideration and withdrawal of the objections to the specification is respectfully requested.

Claims Objections

Claims 12, 13 and 15-22 have been objected to because of numerous informalities. Claims 12, 13 and 15-22 have been canceled.

Rejections Under 35 U.S.C. § 112

Claim 12 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. Claims 13-22 have been rejected for being dependent on claim 12. Claims 12-22 have been canceled.

Rejections Under 35 U.S.C. § 103

Claims 12-22 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,067,316 (Amrany) in view of U.S. Patent No. 5,969,567 (Kahl).

Claims 12-22 have been canceled.

New claims 23-34

Previously presented claim 12 has been rewritten as new claim 23 and further amended to overcome the claim objections and § 112 rejection discussed above with respect thereto. In addition, claim 23 has been amended to recite, inter alia, that an analog second broadband signal can be transmitted by a transmission path, the transmission path comprising,

- a1) a digital frequency splitter, which joins together the second voice signal, which is in digital form, and the second data signal, which is in digital form, to form a digital transmission signal, and
- a2) a digital-to-analog converter being preceded by the digital frequency splitter, which converts the digital transmission signal to the analog second broadband signal to be transmitted in the transmission direction.

In view of the aforementioned amendments to claim 23, Applicants will address the claim 12 § 103 rejection as if it were applied thereto.

In contrast to the embodiment of the present invention recited in claim 23, Amrany neither alone nor in combination with Kahl teaches at least the transmission path comprising the digital frequency splitter and digital-to-analog converter as claimed therein.

For example, with regard to Amrany, Amrany discloses, inter alia, receiving digital PCM data from a digital switch 50 and expanding the digital data according to an A-law or mu-law algorithm at 120. As further disclosed in Amrany, an xDSL signal received from the digital switch 50 may be passed through a block 122 for transmit

shaping as necessary. After the PCM data has been expanded or the xDSL signal transmit shaped, these signals are combined by an adder 124 (or modulator) and delivered to a digital-to-analog converter 126. As can be gleaned, the adder 124 is not a digital frequency splitter as shown, for example, by POTS splitter 46 in Fig. 3 of Applicant's disclosure. In other words, the adder 124 is not the digital frequency splitter as recited in claim 23.

Further, Amrany does not disclose a digital-to-analog converter being preceded by the digital frequency splitter as recited in claim 23. Instead, Amrany discloses positioning a digital-to-analog converter 126 after the adder 124. The digital-to-analog converter 126 is not preceded by a digital frequency splitter.

Moreover, Applicants respectfully disagree with the Examiner's position that it would have been obvious for one of ordinary skill in the art to modify the teachings of Amrany to use an analog-to-digital converter on each path.

For example, although Fig. 3 of Amrany shows a system including separate analog-to-digital converters 76 and 100 on a POTS channel 62 and an xDSL channel 64, the analog-to-digital converters 76 and 100 are preceded by a POTS filter 60. This is in contrast to that as described, for example, on page 4, lines 16-24 of Applicant's disclosure, where it is indicated that no analog POTS splitters may be used in a line terminating device according to an embodiment of the present invention. Further, since Amrany teaches in Fig. 4 providing a single analog-to-digital converter 144 on a receive path 112, one of ordinary skill in the art would not look to Amrany to provide an analog-to-digital converter at the end of a path for voice signals and a path for data signals as recited in claim 23.

Still referring to the § 103 rejection, as correctly indicated by the Examiner, Amrany does not teach a balance filter as recited in claim 23. Kahl, on the other hand, teaches a circuit configuration for line adaptation and echo suppression that includes, inter alia, a balance filter 6a connected on an input side to an output of a digital-to-analog converter 4 and on an output side to an inverting input of an analog subtractor 8. However, there is no teaching, suggestion or motivation in Amrany or Kahl to combine Kahl and Amrany to make the embodiment of the present invention as recited in claim 23.

For example, there is no teaching in Amrany or Kahl to separate a voice band and data band into a reception channel by means of two analog paths and a transmission channel by means of a digital filter means while using a balance filter path for echo suppression, and an impedance matching loop. Thus, for these and the other reasons discussed above, Amrany either alone or in combination with Kahl, does not teach, disclose or suggest the features as recited in claim 23.

Previously presented claims 13-22 have been rewritten as new claims 24-33 to overcome the claim objections and § 112 rejections discussed above with respect thereto. With regard to the § 103 rejections to claims 13-22, new claims 24-33 are believed to be allowable for at least the reasons discussed above for claim 23 from which they depend.

Previously presented claim 12 has been rewritten as new claim 24 and further amended to overcome the claim objections, § 112 rejection and § 103 rejection discussed above with respect thereto. While new claim 24 is believed to be allowable for at least the reasons discussed above for claim 23, it is also believed to be allowable since Amrany does not teach a digital frequency splitter as claimed therein.

For example, claim 24 has been amended to recite, inter alia, a digital frequency splitter comprising “a digital low-pass filter for filtering the second voice signal and a digital high-pass filter for filtering the second data signal”. As previously described, Amrany discloses an adder 124. The adder 124 is not a digital frequency splitter as shown, for example, by two digital filters 43 and 45 forming the POTS splitter 46 in Fig. 3 of Applicant’s disclosure. As such, Applicants believe that the invention as recited in claim 24 is patentable over the cited art of record because neither Amrany taken alone or in combination with Kahl, teaches, discloses or suggests the invention as recited therein.

Dependent Claims

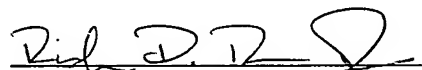
Applicants have not independently addressed the rejections of the dependent claims because Applicants submit that, in view of the amendments to the claims presented herein and, for at least similar reasons as why the independent claims from which the dependent claims depend are believed allowable as discussed, supra, the dependent claims are also allowable. Applicants however, reserve the right to address any individual rejections of the dependent claims should such be necessary or appropriate.

CONCLUSION

Accordingly, Applicants submit that the claims as herein presented are allowable over the prior art of record, taken alone or in combination, and that the respective rejections be withdrawn. Applicants further submit that the application is hereby placed in condition for allowance which action is earnestly solicited.

Respectfully submitted,

By:



Richard D. Ratchford Jr.

Reg. No. 53,865

Attorney for Applicant(s)

F. CHAU & ASSOCIATES, LLC
130 Woodbury Rd.
Woodbury, NY 11797
Tel: (516) 692-8888
FAX: (516) 692-8889